SOUTH SHORE BEACH PROPOSED IMPROVEMENTS

MILWAUKEE COUNTY

MILWAUKEE COUNTY PARKS

MILWAUKEE COUNTY INCORPORATED 1835

WISCONSIN DEPT. OF NATURAL RESOURCES

Great Lakes RESTORATION

THE PROBLEM

The South Shore Beach ranks amongst the worst beaches in the nation in recreational water quality. The McLellan lab at the School of Freshwater Sciences at UWM has carried out extensive field surveys and molecular testing methods to determine the causes of poor water quality at South Shore Beach.

The beach is located inside an existing breakwater that shelters it from Lake Michigan's waves. However, the area across from the breakwater opening experiences greater circulation than areas further from the opening.

POTENTIAL SOURCES OF POLLUTION

- Stormwater runoff
- Gulls and waterfowl excrement
- Boat mooring field

SCOPE OF WORK

- Review of existing environmental data
- Preparation of a base map
- Collect current and wave data
- Conduct numerical modeling
- Develop beach alternatives
    - Locate in areas where there is better water circulation
    - Reduce beach closures

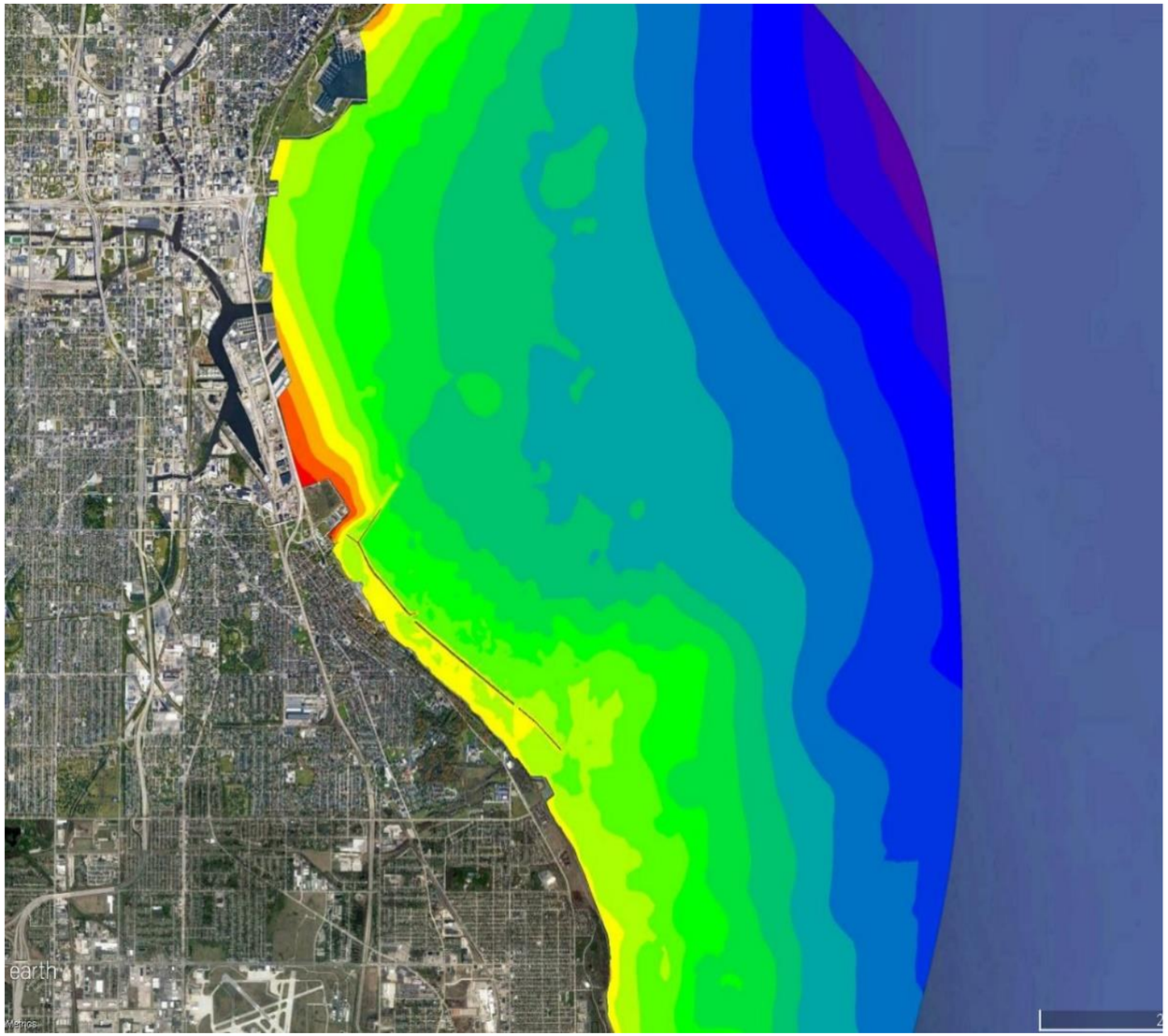
12 YEARS OF MONITORING

The existing beach and the rocky beach, less than 500 ft. to the south, were monitored side by side for 12 years, and the rocky beach was found to have significantly less *E. Coli* and *Enterococci* bacteria. *E. Coli* and *Enterococci* are indicator organisms for fecal bacteria and a reduction in these indicators signify better water quality.

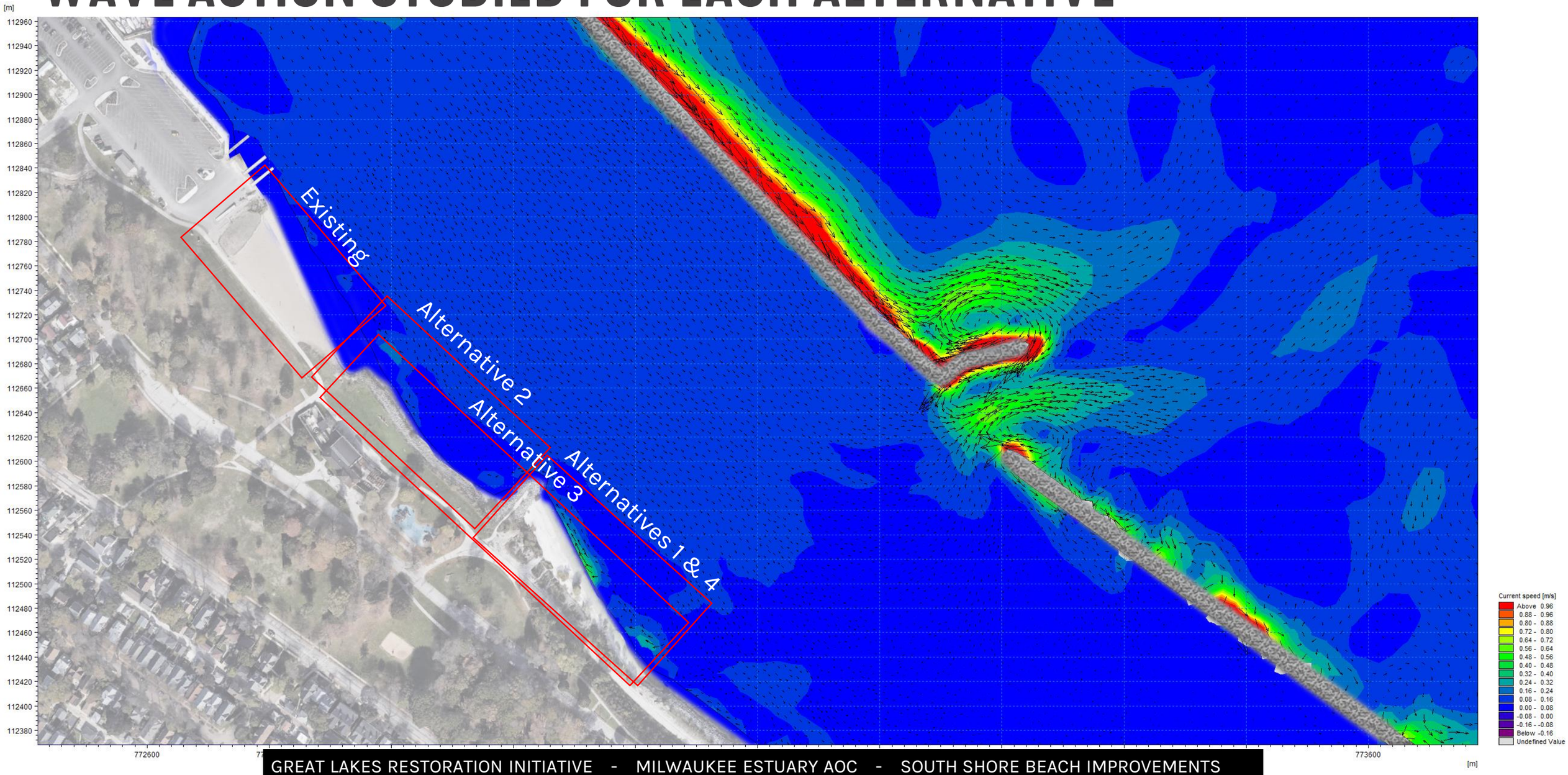
WINDS – WAVES – CURRENTS

- COLLECTION OF DATA ON WIND, WAVES AND CURRENTS.

- NUMERICAL MODELING AT THE SITE WAS DONE. FOR THIS, A MODEL CALIBRATION WAS CARRIED OUT USING DATA COLLECTED BY AN ACOUSTIC DOPPLER CURRENT PROFILER.



WAVE ACTION STUDIED FOR EACH ALTERNATIVE



GREAT LAKES RESTORATION INITIATIVE - MILWAUKEE ESTUARY AOC - SOUTH SHORE BEACH IMPROVEMENTS

SMITHGROUP

ALTERNATIVE 1

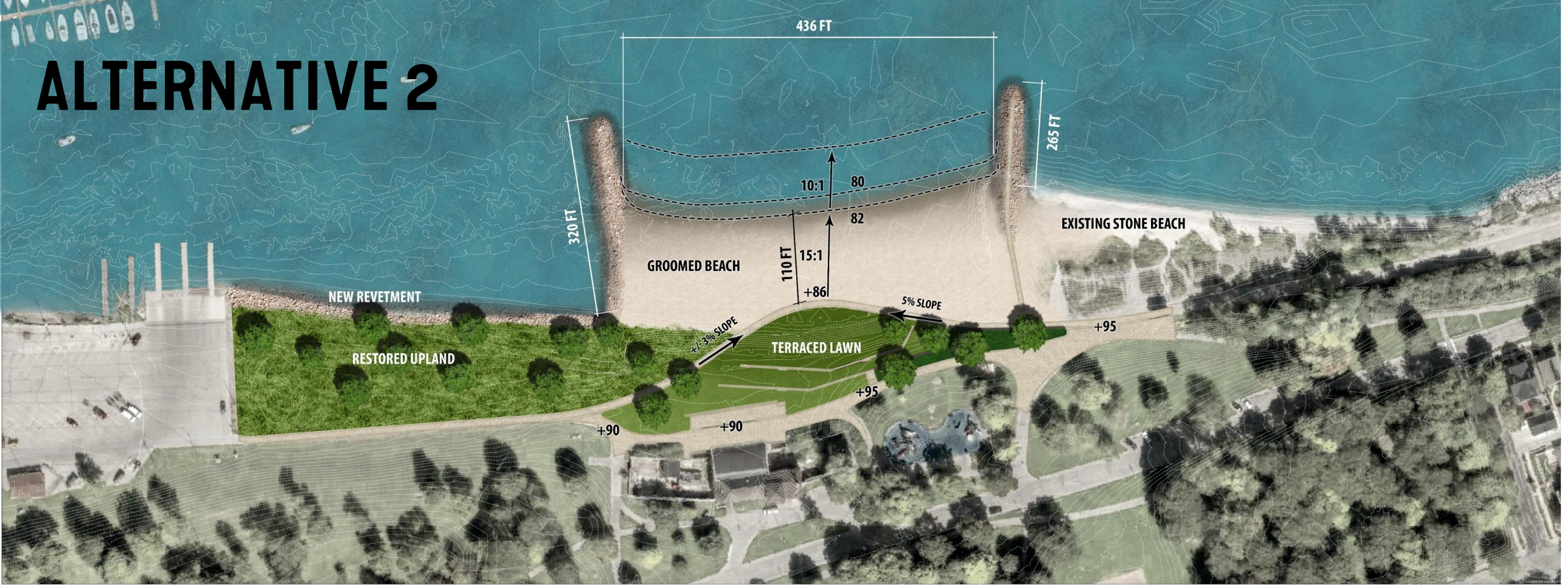
PROS:

- SIMILAR BEACH SIZE TO EXISTING BEACH
- ALIGNS WITH EXISTING BREAKWATER OPENING
- ACCESS TO NORTH GROIN
- BIO RETENTION STORMWATER MANAGEMENT

CONS:

- DISTANCE FROM OFF-STREET PARKING
- FURTHER FROM SOUTH SHORE TERRACE

ALTERNATIVE 2



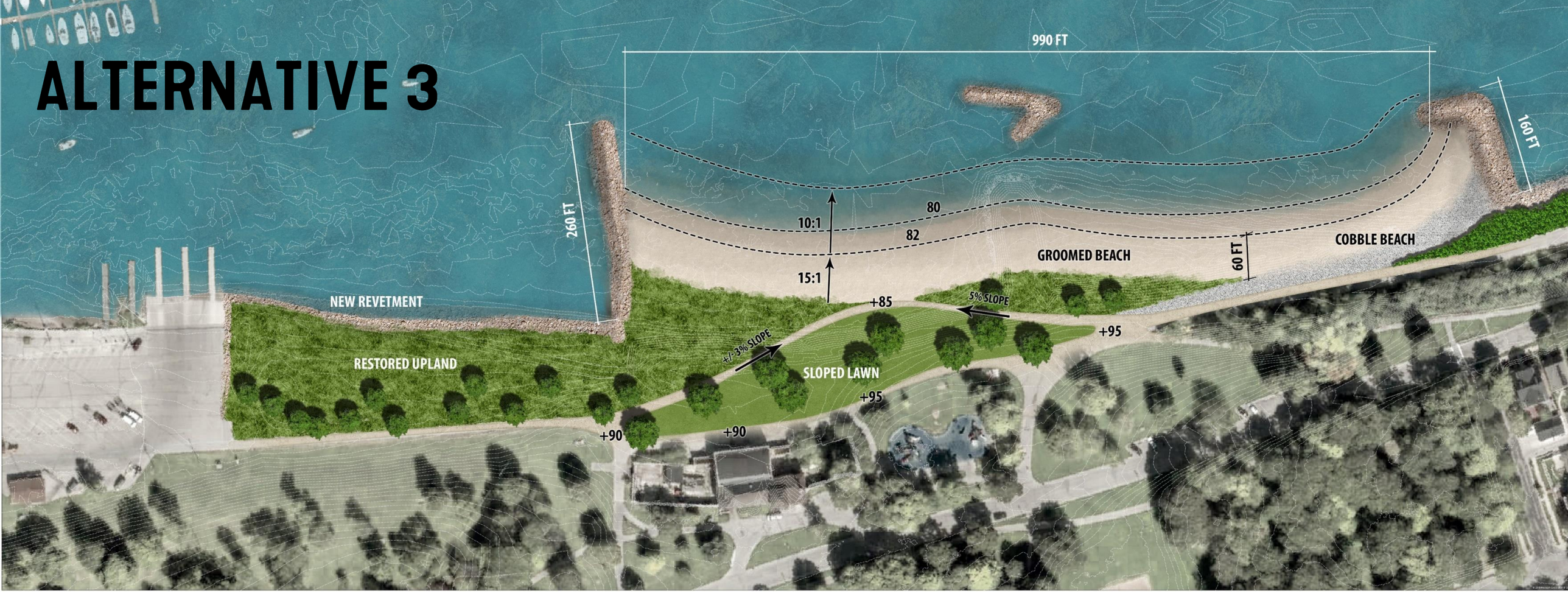
PROS:

- CENTRALLY LOCATED TO SOUTH SHORE TERRACE
- SIMILAR BEACH SIZE
- CLOSER TO PARKING
- BIO RETENTION STORMWATER MANAGEMENT
- MAINTAINING EXISTING ROCK BEACH.

CONS:

- CIRCULATION IS LESS THAN ALTERNATIVE 1 AND 4
- THERE'S A POTENTIAL FOR SAND TO BE DEPOSITED AT SOUTH SHORE TERRACE AND ON THE OAK LEAF TRAIL

ALTERNATIVE 3



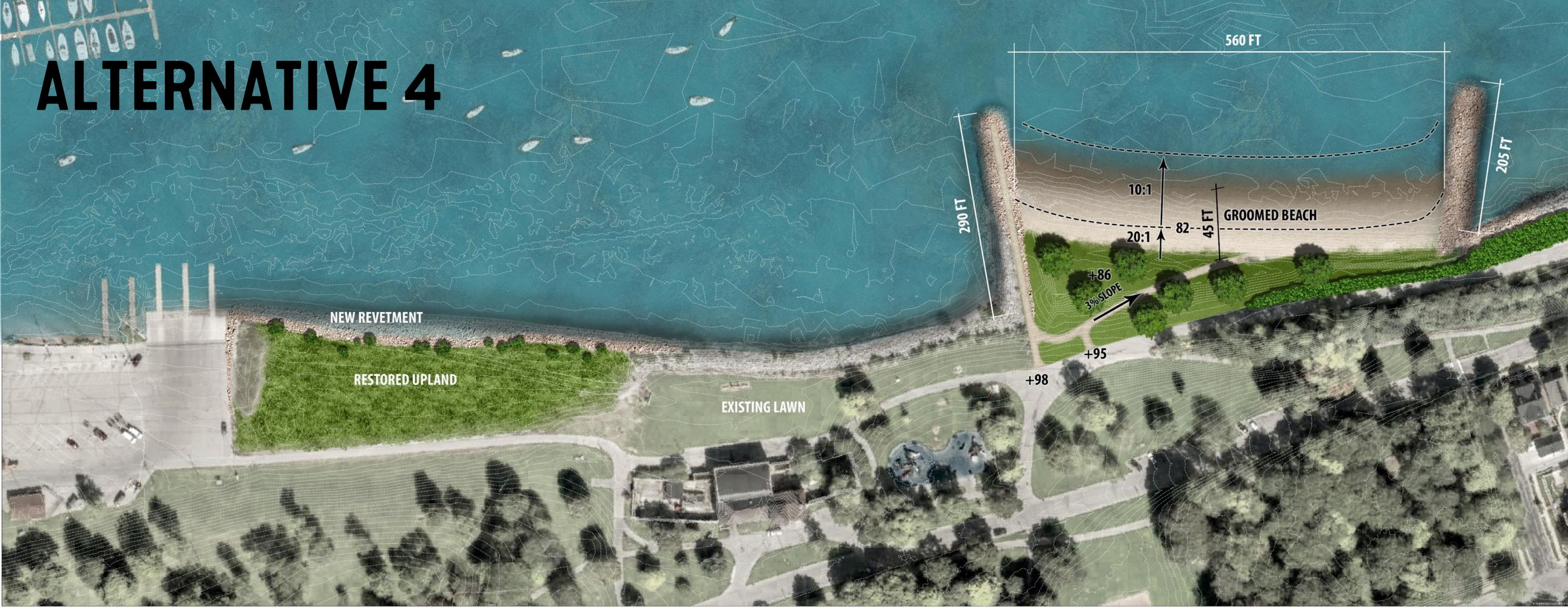
PROS:

- CENTRALLY LOCATED
- ACCESS TO SOUTH SHORE TERRACE
- BIO-RETENTION STORMWATER MANAGEMENT
- VIEWSHED FROM OAK LEAF TRAIL

CONS:

- REDUCED CIRCULATION FOR NORTH BEACH IN COMPARISON TO ALTERNATIVE 1 AND 4
- THERE IS A POTENTIAL FOR SAND TO BE DEPOSITED AT SOUTH SHORE TERRACE AND ON THE OAK LEAF TRAIL

ALTERNATIVE 4



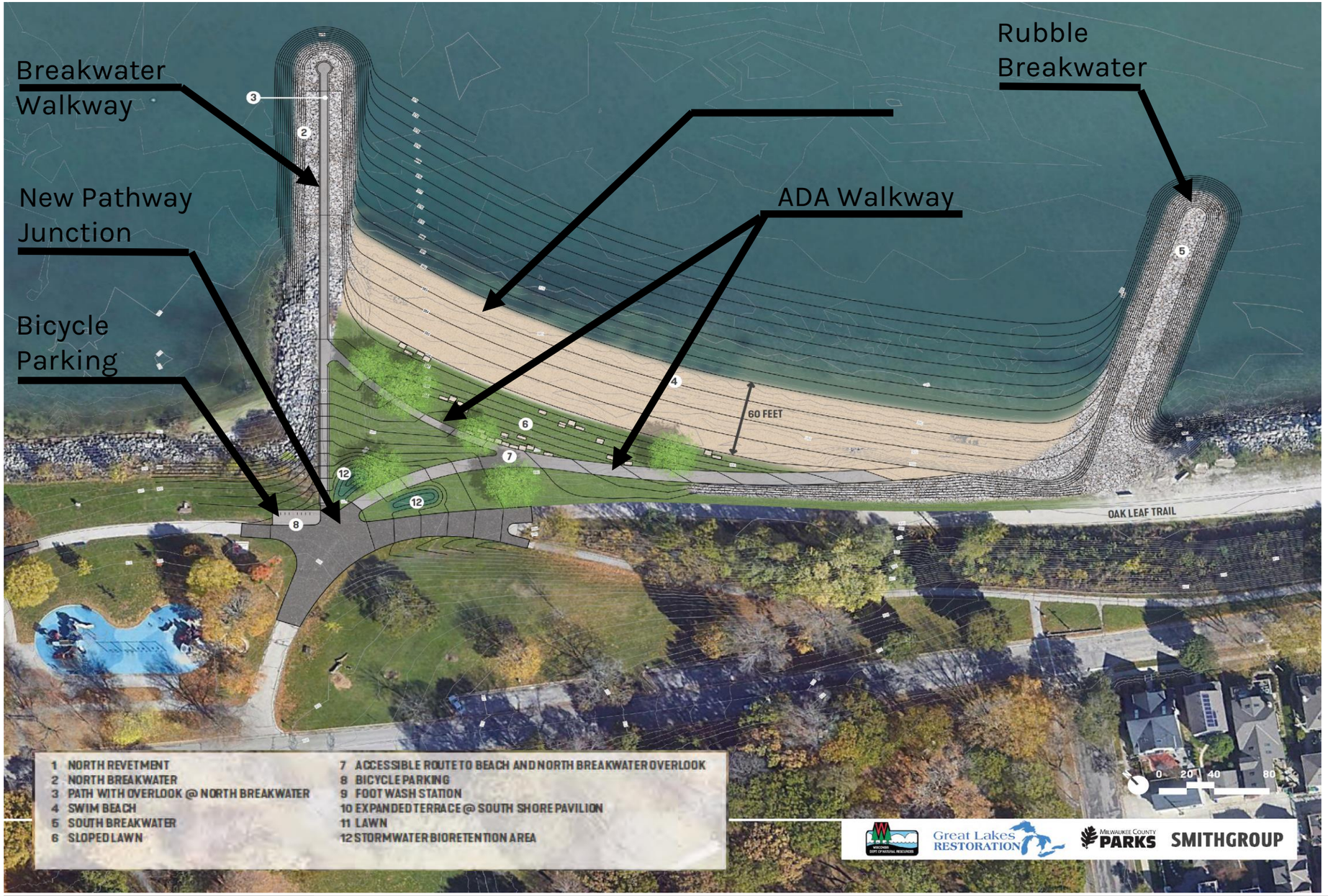
PROS:

- CENTRALLY LOCATED
- ACCESS TO SOUTH SHORE TERRACE
- ACCESS TO NORTH GROIN
- BIO RETENTION STORMWATER MANAGEMENT
- REDUCED COST

CONS:

- DISTANCE FROM OFF-STREET PARKING
- FURTHER FROM SOUTH SHORE TERRACE
- REDUCED BEACH AREA WHEN COMPARED TO OTHER ALTERNATIVES

RECOMMENDED ALTERNATIVE



This alternative and location provides:

- Good water circulation
- Few anticipated beach closures
- ADA access to the beach and breakwater walkway
- Breakwaters to maintain sand beach

EXISTING BEACH REDESIGNED

The redesigned existing beach area provides:

- Larger lawn area for picnicking and open play
- Prairie plantings to discourage geese
- Expanded terrace and widened Oak Leaf Trail near pavilion

NEXT STEPS

PUBLIC

- Attend Public Information Meeting (PIM), December 2, 5:30 – 7:00 p.m. South Shore Park Pavilion
- Provide comments at the PIM or send to Karl Stave, P.E., Milwaukee County karl.stave@milwaukeecountywi.gov

COUNTY & WDNR

- Complete Design & Construction Plan Set
- Apply for Permits
  - ✓ Dredging
  - ✓ Pond – Stormwater Pond
  - ✓ Lake Shore Erosion Control
  - ✓ Wetland Disturbance
- Request GLRI Funding
- Construct When Grant Funding Becomes Available